Applied Optics

CUMULATIVE INDEX

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Vol. 1 (1984)
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Preface

In 1974 the Optical Society of America began production of the annual indexes for its journals from information stored on magnetic tape for each issue. This was not only to produce an annual index for each journal but to be able to produce a merged cumulative index for all OSA journals. The first OPTICS INDEX covered 1974–1979.

The indexed material includes subject and author entries for Vols. 70–73 (1980–1983) of the *Journal of the Optical Society of America;* in 1984 JOSA was divided into two parts: JOSA-A, Vol. 1, and JOSA-B, Vol. 1; Vols. 19–23 (1980–1984) of *Applied Optics;* Vols. 5–9 (1980–1984) *Optics Letters;* and Vols. 1 and 2 (1983–1984) of the *Journal of Lightwave Technology* (published jointly with the Institute of Electrical and Electronic Engineers).

Subjects are indexed by key word, and the user should remember there is a style connected with key words, which can change with time, for example, laser for maser. Further, there are new subjects which have acquired importance such as bistability, femtosecond phenomena, charged coupled devices, and buried heterostructure lasers. Some areas such as fiber optics have many new subdivisions and applications, and much of this evolution took place during the five-year period covered by this index. Thus, many early articles will not be indexed as specifically as those appearing late in the period. Help with this problem of where material may be found, or related material, is given by the *See* and *See also* entries. In addition, most articles appear under several entries, e.g., the material measured, the instrument used, the application, and the discipline.

Computer handling of the material makes compiling the annual indexes much easier and facilitates later combining of the material into a cumulative index. One problem continues to give trouble: Even though a serious effort is made to combine all variations of an author's name into the most complete form for the annual index, when all volumes and journals are combined the work has to be done again for many hundreds of authors. When an author's name is stored in the form on a published article, and then later the computer is asked to alphabetize authors for an annual or cumulative index it will list all forms as separate authors. Similar names may or may not be the same person, and often there are two or more people with the same initials, especially if only one initial is given. Though much time has been spent eliminating discrepancies there may still be some.

To aid in identification of the material key letters are given in many cases:

(A) abstract
(B) book review
(L) letter, rapid communication
(M) meeting report
(N) editorial, note in a department
(P) patent.

To keep the volume within a reasonable size the author index lists the article's published title under the first-named author; only volume and page are given under other authors. Under a given author all entries are alphabetized by title for the sole author's articles first, followed by articles alphabetized by the name of the second author. Under subjects cross references are helpful since there is no consistent rule for usage whether material will be listed under the adjective or the noun; hence it is Spectroscopy, atomic, not Atomic spectroscopy; Image processing, not Processing, image; Remote sensing, not Sensing, remote. Under a topic or given subject actual published titles are used so that editors, with the cooperation of authors, have attempted to make the first word of the title meaningful, e.g., Field spread of a beam, not The field spread.

Optical Society of America

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Beam-propagation method: analysis and assessment, JOSA **71:** 803
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Biographical notes

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Apfel, Joseph H., JOSA **70:** 891
Aspnes, David E., JOSA **70:** 353
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Lasers, chemical

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High-loss resonators for mode control in diode lasers (A), JOSAA **1:** 1295
Influence on the steady-state oscillation spectrum of a diode laser for feedback of light interacting coherently and incoherently with the field established in the laser cavity, AO **23:** 2070
Interferometric measurement of time-varying longitudinal cavity modes in GaAs diode lasers, AO **20:** 2694
Modal analysis of separate-confinement heterojunction lasers with inhomogeneous cladding layers, OL **8:** 283
Monolithically Peltier-cooled laser diodes, JLT **2:** 175
Noise properties of stabilized single-mode lasers in fiber interferometers, JLT **1:** 517
Ocular effects of GaAs lasers and near infrared radiation, AO **23:** 2181
Optical time-domain reflectometer with low-power InGaAsP diode lasers, JLT **1:** 616
Optimum design of 1.55-μm double heterostructures and ridge-waveguide lasers, OL **9:** 330
Optimum epilayer structures for integrated optics lasers, AO **19:** 2370
Picosecond pulses from mode-locked double-heterostructure (AlGa)As lasers using an external cavity (A), JOSA **70:** 668
Statistical measurements as a way to study mode partition in injection lasers, JLT **2:** 44

Lasers, gas

15.9-μm acetylene laser (P), AO **20:** 1971
Anomalous dispersion effects in low-pressure atomic-iodine lasers at 1.315 μm, JOSA **71:** 1080
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Asymmetrical output coupler (P), AO **19:** 668
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Autopointing laser system (P), AO **21:** A140
Carbon monoxide laser power delivery with an As_2S_3 infrared glass fiber, AO **23:** 3017
Combination-tone pulsing, subharmonics, and the onset of chaos in multimode lasers (A), JOSA **72:** 1811
Curved mirror lasers (P), AO **20:** A220
Dependence of single-mode laser self-pulsing on variations in operating frequency (A), JOSA **72:** 1811
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Double electric discharge coaxial laser (P), AO **23:** 1759
Double-pulsed output with a Xe IV laser excited by long current pulse discharges (L), AO **19:** 5
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Kinetics of population inversion in a copper-vapor laser investigated by a modified hook method, OL **5:** 93
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Laser bottlenecking technique (P), AO **22:** 2508
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New simple model for high-power pulsed gas lasers (A), JOSAB **1:** 513
Off-resonance dispersion profile effect in gas laser resonators, AO **19:** 4214
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Recent pulse width and linewidth measurements on the mode-locked Kr^+-ion laser (L), AO **19:** 2663
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Lasers, He–Ne

Combination-tone pulsing, subharmonics, and the onset of chaos in multimode lasers (A), JOSA **72:** 1811
Curved mirror lasers (P), AO **20:** A220
Frequency stabilization of a 0.633-μm He–Ne longitudinal Zeeman laser, AO **19:** 3173
Frequency stabilization of internal-mirror He–Ne lasers, AO **22:** 655
Frequency stabilization of internal-mirror He–Ne lasers by a flowing-water method (L), AO **21:** 1156
Frequency stabilized lasers: optical feedback effects, AO **20:** 3711
Gas-lens effect and cavity design of some frequency-stabilized He–Ne lasers, AO **22:** 1251
Gas–lens effect and cavity design of some frequency-stabilized He–Ne lasers: comments (L), AO **22:** 3312
Gas-lens effect and cavity design of some frequency-stabilized He–Ne lasers: author's reply to comments (L), AO **22:** 3313
Improved frequency stabilization for a two-mode helium-neon Zeeman laser (N), AO **23:** 547
Intracavity dispersion measurements with a 3.39-μm He–Ne laser, AO **23:** 2906
Laser gyro coupling system (P), AO **21:** 3079
Low-frequency laser noise of several commercial lasers (L), AO **19:** 1023
Measurement of the saturated absorption signal of CH_4 at 3.39 μm using a He–Ne laser and a multipath cell (L), AO **19:** 1227
Method of characterizing the optical quality of glass (L), AO **22:** 2241
Mode-pulling, mode-splitting, and pulsing in high-gain lasers (A), JOSA **70:** 1622
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National Physical Laboratory–National Bureau of Standards iodine-stabilized helium–neon laser intercomparison, OL **6:** 188
Observation of bistable behavior in the polarization of a laser, OL **7:** 356
Power spectrum of intensity fluctuations in a He–Xe 3.5-μm unidirectional ring laser (A), JOSA **72:** 1811
Rejuvenating He–Ne lasers (L), AO **20:** 1
Rejuvenating He–Ne lasers: comment (L), AO **20:** 1605
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Sum-frequency mixing of CO_2 and He–Ne lasers in proustite, OL **7:** 63
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Wavelength ratio of stabilized laser radiation at 3.39 μm and 0.633 μm, AO **22:** 3414

Lasers, HF

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Refractive index of HF from 2.5 μm to 2.9 μm, AO **21:** 4331
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Lasers, high-power

CO_2 laser fiber delivery system (A), JOSAA **1:** 1218
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Systems for high power transmission through fibers for use in materials processing (A), JOSAA **1:** 1218

Lasers, index-guided

Analysis of leakage currents in 1.3-μm InGaAsP real-index-guided lasers, JLT **2:** 201
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Lasers, infrared

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Application of an isotopically enriched $^{13}C^{16}O_2$ laser to an optically pumped far-infrared laser, OL **5:** 153
Ar-ion-laser-pumped infrared dye laser at 875–1084 nm, OL **9:** 544
Average power limitations in high-repetition-rate pulsed gas lasers at 10.6 and 16 μm, AO **19:** 930
Broadly tunable laser action beyond 3 μm from $(F_2^+)_A$ centers in lithium-doped KI, OL **6:** 627
Carbonyl fluoride (COF_2): strong new continuous-submillimeter-wave laser source, OL **7:** 322, (errata), OL **8:** 509
CCl_2F_2 optical filter for a TEA CO_2-laser-pumped NH_3 laser, OL **6:** 177
CHD_2F: powerful cw laser source at 384 μm (A), JOSA **73:** 1920
Color-center laser continuously tunable from 1.67 to 2.46 μm, OL **8:** 7
Comparison of standing wave and traveling wave resonators for an FIR laser (L), AO **19:** 3425
Computer control of broadly tunable lasers: conversion of a color center laser into a high resolution laser spectrometer, AO **21:** 236
Continuously tunable CH_3F Raman far-infrared laser, OL **6:** 369
Continuous tuning of a color-center laser between 2 and 4 μm, OL **7:** 271
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Continuous-wave far-infrared two-photon-pumped, single-photon-pumped, and Raman laser emission from $^{14}NH_3$, OL **6:** 372
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Continuous-wave Stark far-infrared lasing lines in $^{15}NH_3$ optically pumped by a CO_2 or N_2O laser, OL **6:** 449
Determining tunable diode laser spectrometer performance through measurement of N_2O line intensities and widths at 7.8 μm, AO **21:** 2906
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Effects of passive isolation on several optically pumped far-infrared laser lines, OL **6:** 230
Efficient far-infrared laser lines from CH_2F_2 pumped by a continuous-wave waveguide CO_2 laser, OL **9:** 542
Electron-beam-excited Xe_2Cl laser (A), JOSA **70:** 672

Energy pooling pumped infrared laser emission in laser-excited sodium vapor (A), JOSAB **1:** 508
Energy-transfer mechanisms in the CH_3F–SF_6 optically pumped laser, OL **5:** 336
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Far-infrared laser lines in vinyl fluoride optically pumped by a CO_2 laser near 10 μm, OL **9:** 71
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Generation of tunable picosecond pulses in the vibrational infrared by stimulated electronic Raman scattering of rhodamine-dye-laser pulses from the 6*s*–5*d* cesium transition, OL **9:** 50
Generation of widely tunable nanosecond pulses in the vibrational infrared by stimulated Raman scattering from the cesium 6*s*–5*d* transition, OL **9:** 47
High-efficiency short-pulse KrF laser (A), JOSA **70:** 673
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Infrared and Millimeter Waves. Vol. 7, Coherent Sources and Applications, Part II. Edited by Kenneth J. Button (B), Reviewed by Kruse, P. W., Seashore, C. R., AO **23:** 203
Infrared dye laser in the 685–880-nm range (L), AO **23:** 651
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Intracavity double resonance on optically pumped submillimeter lasers, OL **5:** 496
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Isotopically pumped isotopic CF_4 laser, JOSA **72:** 40
Laser action at 3 μm in a hydrogen discharge (L), AO **21:** 357
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Mode-locked operation of Co:MgF_2 and Ni:MgF_2 lasers, OL **9:** 116
Mode locking by synchronous pumping using a gain medium with microsecond decay times, OL **7:** 414
Multipass-prism interferometer for fine-frequency-tuning, single-mode operation of TEA CO_2 lasers, OL **9:** 393
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New F_2^+ center lasers for the 1.3 to 1.8 μm range (A), JOSA **70:** 634
NH_3 12-μm laser pumped by a sequence CO_2 laser, OL **5:** 528
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Off-axis coherently pumped laser (P), AO **23:** 2848
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Optically pumped ultrashort cavity $In_{1-x}Ga_xAs_yP_{1-y}$ lasers: picosecond operation between 0.83 and 1.59 μm, OL **6:** 534
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Parametric study and modeling of the *e*-beam pumped KrF laser medium in high current-density range (A), JOSA **70:** 673
Phonon-terminated laser emission from Ni^{2+} ions in $KMgF_3$, OL **8:** 371
Polarization study of an internal mirror cw 28-μm water vapor laser, AO **20:** 2395
Possible source of anomalous results in IR laser photochemistry (L), AO **22:** 963
Predictions of far-infrared laser lines from $^{14}NH_3$ and $^{15}NH_3$, OL **7:** 96
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Pressure shift in the 170-μm emission of the cw optically pumped CH_3OH laser, OL **5:** 383
Progress in color center lasers (A), JOSA **70:** 634
Proposal for high-power radiative-collisional lasers, OL **7:** 397
Raman gain in 12-μm NH_3 lasers, OL **7:** 520
R-Branch tuning in the $^{13}CH_3F$ Raman far-infrared laser (A), JOSA **73:** 1920
Recent advances in transition-metal-doped lasers (A), JOSA **70:** 635
Reflectivity measurements on hot reactive liquids using a FIR laser, AO **19:** 3118
Room-temperature-stable, F_2^+-like center yields cw laser tunable over the 0.99–1.22-μm range, OL **5:** 188
Rotational structure variation in the 337.1-nm N_2 laser transition, AO **19:** 1697
Sequence bands of the isotope $^{12}C^{18}O_2$ laser, OL **6:** 114
Single-mode, long-wavelength diode lasers (A), JOSAA **1:** 1295
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Soliton laser, OL **9:** 13, (errata), OL **9:** 105
Stratospheric trace constituent profile retrievals using laser heterodyne radiometer IR limb sensing spectra, AO **20:** 505
Synchronously pumped D_2 gas-in-glass fiber Raman laser operating at 1.56 μm, OL **9:** 241
Theory of multiphoton dissociation of polyatomic molecules under the action of an infrared laser field (A), JOSA **70:** 608
Threshold currents for GaInAsP lasers emitting at 1.55 μm, OL **5:** 211
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Tunable, continuous-wave laser action using $(F_2^+)_A$ centers in lithium-doped KCl, OL **5:** 214
Tunable-diode-laser measurements of gain in optically pumped NH_3, OL **8:** 36
Tunable, high-power CH_3F Raman far-IR laser (A), JOSA **70:** 674
Tunable Ho^{+3}:YLF laser at 2.06 μm (L), AO **19:** 1729
Tunable picosecond infrared pulse generation from a mode-locked F_A (II) color-center laser, OL **5:** 7
Tunable picosecond pulses around 1.3 μm generated by a synchronously pumped infrared dye laser, OL **8:** 205
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Water vapor absorption at the atomic iodine laser line (L), AO **20:** 3481
Wide-range amplification of a tunable-diode laser using optically pumped high-pressure NH_3 gas, OL **9:** 279

Lasers, materials

Composite laser mirror (P), AO **23:** 4186
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Lasers, mode-locked

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Effects of cavity dispersion in femtosecond mode-locked dye lasers (A), JOSAB **1:** 436
Limits to pulse advance and delay in mode-locked lasers, JOSAB **1:** 771
Mode-locked operation of Co:MgF_2 and Ni:MgF_2 lasers, OL **9:** 116
Mode locking of a homogeneous gain laser through temporally modulated phase-conjugate reflectivity, OL **9:** 208
Passive mode locking of semiconductor-laser diodes (A), JOSAB **1:** 452
Soliton laser, OL **9:** 13, (errata), OL **9:** 105
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Theory of passively mode-locked lasers including self-phase modulation and group-velocity dispersion, OL **9:** 156
Transient picosecond four-wave mixing in an amplifying dye jet (A), JOSA **73:** 1965

Lasers, molecular

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Lasers, neodymium

1-pps 2-μsec pulse high-energy frequency-doubled Nd:YAG/glass laser for studying combustion processes, AO **21:** 1758
300-Femtosecond synchronously mode-locked dye laser pumped by the compressed second harmonic of Nd:YAG (A), JOSAA **1:** 1287
Active mirror: a large-aperture medium-repetition rate Nd:glass amplifier, AO **20:** 351
Active–passive mode-locked Nd:YAG oscillator, AO **21:** 2897
Choice of an optimum multichannel Nd:glass laser system for fusion experiments, AO **19:** 924
Compression of pulses from a continuous-wave mode-locked Nd:YAG laser, OL **9:** 505
Continuous-wave mode-locked Nd:phosphate glass laser (A), JOSAB **1:** 437
Continuous-wave mode-locked Nd:YAG-pumped subpicosecond dye lasers, OL **8:** 554
Decay kinetics of $^4F_{3/2}$ fluorescence of Nd^{+3} in YAG at room temperature, AO **20:** 1203
Demonstration of the inverse Cerenkov interaction between free electrons and laser light at 1.06 μm (A), JOSA **70:** 1409
Dynamic pumping model for amplifier performance predictions, AO **20:** 1595
Evaluation of Nd-glass laser systems for incoherent Thomson scattering diagnostics of low density plasmas, AO **19:** 2118
Experimental determination of the incremental gain for a transit in a neodymium laser, AO **20:** 972
Fiber and grating compression of 90-picosecond, 1.06-micrometer pulses to 3 picoseconds (A), JOSAA **1:** 1288
Fluence in 1064-nm laser beams: its determination by photography with Polaroid film (L), AO **20:** 169
Frequency doubling a laser beam (P), AO **23:** 2464
Frequency jitter and linewidth of a single-mode monolithic Nd:YAG laser (A), JOSAB **1:** 438
Frequency-stabilized Nd:YAG lasers (A), JOSAA **1:** 1241
Generation of intense blue tunable picosecond pulses by synchronous mixing of a Nd:glass laser with its sideband radiation, AO **19:** 1844
High-average-power intracavity second-harmonic generation using $KTiOPO_4$ in an acousto-optically Q-switched Nd:YAG laser oscillator at 5 kHz, OL **9:** 76
High-brightness Nd:YAG laser using SBS phase conjugation (A), JOSA **70:** 635
High efficiency third-harmonic conversion of a large-aperture Nd:glass laser (A), JOSA **70:** 1401
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High power laser with tuning and line narrowing capability (P), AO **20:** A184
High-power phosphate-glass laser system: design and performance characteristics, AO **19:** 409
High-power single-mode laser operation using stimulated Rayleigh scattering, OL **6:** 339
High repetition rate frequency-doubled Nd:YAG laser for airborne bathymetry, AO **20:** 968
Holographic cinematography of time-varying reflecting and time-varying phase objects using a Nd:YAG laser, OL **7:** 122
Improved laser-damage-resistant polymethyl methacrylate, JOSAB **1:** 853
Influence of quadratic pump power distribution on hole burning in neodymium lasers, AO **21:** 4070
Intracavity mode-locked and frequency-doubled Nd:YAG laser: pump- and mode-size effects, AO **22:** 2390
Large aperture harmonic conversion experiments at LLNL: comments (L), AO **22:** 1957
Laser coagulation: practical advice from a theoretical viewpoint (L), AO **19:** 6
Laser employing an unstable resonator having an output transmissive mirror (P), AO **22:** 2508
Laser-induced-breakdown studies in selected materials at 1.06 and 0.53 μm (A), JOSA **72:** 1755
Laser performance of chromium-sensitized neodymium mixed garnets (A), JOSA **73:** 1928
Lasing characteristics of a Nd^{3+}:YAG laser with a long optical-fiber resonator, JOSA **73:** 838
Measured spatial properties of the cw Nd:YAG laser beam, AO **19:** 3655
Nd^{3+} beta″ alumina platelet laser, OL **9:** 119
Nd:YAG fluorescence from high excited levels (A), JOSA **70:** 1632
Nd:YAG quantum efficiency by interferometric calorimetry (A), JOSA **70:** 1632
Negative-feedback power stabilization in a mode-locked Nd:YAG laser, OL **5:** 191
New scheme for ultrashort-pulsed Nd^{3+}:YAG laser operation: a branched cavity, internally seeded regenerative amplifier (L), AO **22:** 1611
Optical analysis of internal strains in laser rods using interferometry (L), AO **20:** 4146
Optical component development and manufacture for the nova laser (A), JOSA **70:** 1615
Optical spectra and laser parameters of Nd^{3+} in bismuth chloride glasses (A), JOSA **71:** 1620
Optical technology requirements for neodymium glass fusion lasers (A), JOSA **70:** 1614
Passively switched double-pass active mirror system, AO **20:** 1588
Passive mode locking of lasers with a tunable dye cell, OL **7:** 523
Passive mode locking using an antiresonant-ring laser cavity, OL **6:** 334
Phase-conjugate reflection-induced spiking oscillation in a multimode $LiNdP_4O_{12}$ laser, AO **21:** 744
Picosecond double pass amplifier (L), AO **19:** 3595
Picosecond time-resolved studies of VUV harmonics of a mode-locked Nd:Glass laser (A), JOSA **70:** 649
Potential for coherent Doppler wind velocity lidar using neodymium lasers, AO **23:** 2477
Progress in slab geometry solid-state lasers (A), JOSA **73:** 1899
Proposed kilowatt-average-power Nd:glass laser (A), JOSA **72:** 1755
Pulse compression by intracavity degenerate four-wave mixing (L), AO **20:** 524
Pump-size effects in Nd:YAG lasers (L), AO **19:** 3041
Pure single-mode $LiNdP_4O_{12}$ solid-state laser transmitter for 1.3-μm fiber-optic communications, AO **21:** 3466
Regenerative amplification in large-aperture Nd: glass rod amplifiers: proof of concept (A), JOSA **70:** 636
Repetitively pulsed mode-locked Nd:phosphate glass laser oscillator–amplifier system, AO **21:** 1474
Simultaneous temporal and spectral characterization of a stable, high-power, picosecond Nd:YAG laser system (A), JOSA **73:** 1897
Single- and multiple-shot laser-damaged properties of commercial grade PMMA, AO **23:** 682
Single-frequency active–passive mode-locked Nd:YLF oscillator at 1.053 μm (L), AO **21:** 2091
Slab-geometry Nd:glass laser performance studies, OL **7:** 405
Spatially resolved tunable diode-laser absorption measurements of CO using optical Stark shifting, AO **22:** 1980
Stable single-axial-mode operation of an unstable-resonator Nd:YAG oscillator by injection locking, OL **5:** 96
Stable–unstable resonator face-pumped Nd:YAG slab laser (A), JOSA **73:** 1900
Stimulated emission cross sections of Nd: $Y_3Al_5O_{12}$(YAG), Nd:YVO_4, and Nd: $La_2Be_2O_5$(BeL) (A), JOSA **70:** 1621
Stress-induced birefringence in the athermal glass LHG-8 (A), JOSA **72:** 1755
Submegahertz frequency-stabilized Nd:YAG oscillator, OL **7:** 408
Tripled Nd:YAG pumped Tm^{3+} laser oscillator (P), AO **22:** 3135
Tunable Nd:glass slab laser (A), JOSA **73:** 1900
Ultrashort pulse generation by Nd^{3+}:glass and Nd^{3+}:YAG lasers, JOSA **71:** 520

Lasers, nitrogen

Aerial testing of an N_2 laser fluorosensor system, AO **22:** 1717
Compact capacitively coupled N_2 laser with a new electrode design, OL **9:** 113
Ionizing waves of potential gradient in a transversely excited N_2 laser cavity, AO **21:** 2317
Laser spectroscopic analysis of N_2 pulsed discharges at low temperatures (L), AO **19:** 3590
New vibrational bands in nitrogen laser emission spectra, AO **22:** 3612
Rotational relaxations in a high pressure N_2 laser (L), AO **22:** 770
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Lasers, nuclear-pumped

High power nuclear photon laser (P), AO **23:** 182

Lasers, plasma

Measured gain for XUV plasma lasers at varying pump intensities, AO **22:** 1309

Lasers, Q-switched

First-passage-time problem for a Q-switched laser (A), JOSAA **1:** 1331
Measurement of nonlinear frequency chirp of Q-switched ruby laser, AO **20:** 1477
Q-switched frequency-doubled Nd:YAG laser surface finishing of metals (L), AO **22:** 2521
Raman oxygen detection for combustion control and regulation, AO **22:** 901
Refractive Q-switching of a ruby laser by a moving plasma, AO **21:** 3725
Unpolarized EO Q-switched laser, AO **22:** 1306
Upper-limit speed of a moving object in front-surface holography using a Q-switched ruby laser, AO **21:** 721

Lasers, Raman

Anti-Stokes Raman laser emission at 149 nm in atomic bromine, OL **8:** 520
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